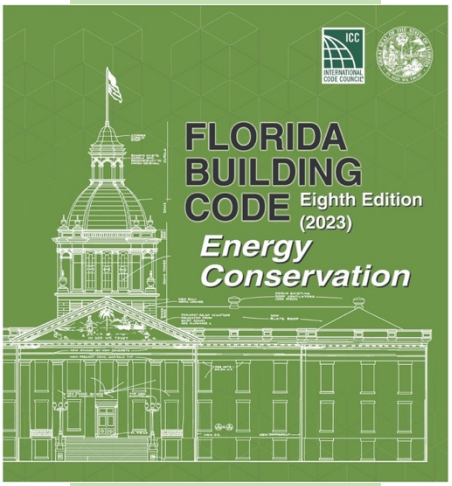
2023

Significant Provision Changes in **8th Edition (2023) Florida Building Code, Energy Conservation Volumes –** COMMERCIAL & RESIDENTIAL



This publication provides an overview of the most impactful commercial and residential provision changes between the *7th Edition (2020) and 8th Edition (2023) Florida Building Code, Energy Conservation* (FBCEC) volumes. A quick reference, bulleted list highlights the most impactful commercial and residential FBCEC changes. The remaining pages provide chapter-by-chapter discussions of impactful changes to the code, separated into commercial and residential sections.

The *8th Edition (2023) FBCEC* is comprised of the *7th Edition (2020) Florida Building Code, Energy Conservation* (FBCEC) "base code" plus Florida Building Commission-approved modifications from both the *2021 International Energy Conservation Code (IECC)* and other proposals made during the 2023 code change cycle.

Division of Professions
F B C
FLORIDA BUILDING COMMISSION
CODES AND STANDARDS
Department of Business and Professional Regulation

HIGHLIGHTS:

Commercial Energy Conservation Code Changes

- Several new definitions added
- Revised opaque thermal envelope air barrier compliance includes buildings' thermal envelope performance testing requirements for buildings other than Group R and I occupancies
- Interlocking operable openings heating and cooling system operation is a mandatory requirement
- Increased minimum efficiencies in seven HVAC equipment tables, added six new HVAC equipment efficiency tables and added a new "SEER2" rating for ACs and "HSPF2" for HPs
- A hydronic heat pump on a hydronic system having a total pump system power exceeding 10 hp (7.5 kW) must have a two-position automatic valve that interlocks with the compressor to shut off water flow when the compressor is off
- Extensively revised and reorganized lighting devices and lighting control sections for interior lighting. Maximum interior Lighting Power Density (LPD) allowance for many building types is reduced. Luminaires with specific application controls are exempted from time-switch control requirements. Spaces not provided with occupant sensor controls must have manual light reduction controls for general lighting. Added new occupant sensor controls function requirement for corridor areas
- Parking garage lighting control requires an occupant sensor or a time-switch control
- Functional performance testing must be witnessed and documented by a licensed design professional or approved agency
- Revised provisions and clarifications for construction documents reporting requirement
- A new fenestration product replacing an existing fenestration unit must meet the *U*-factor and SHGC requirements.

HIGHLIGHTS:

Residential Energy Conservation Code Changes

Significant Changes

- Updated minimum equipment efficiency requirements to federal standards for heat pumps and other equipment
- New subsection prohibits electric resistance from being the primary space heating system type used for complete central equipment replacements in Climate Zone 2
- Increased stringency for performance compliance method (R405), now requires an e-ratio of 0.95 to pass
- Minimum efficacies are increased for "In-line fan" and "Bathroom, utility room" whole-house mechanical ventilation fan locations
- Increased percentage (now 100%) of higher efficacy permanently installed luminaires and lamps required
- Site-wrapped supply ducts not completely inside the building thermal envelope to be insulated to a minimum of R-8
- Reduces existing home alteration new lighting requirement exception limit
- Prescriptive compliance R402 form equipment types and minimum efficiency levels are updated

Clarifications

- Adds insulation retention language to address raised ceilings and separating conditioned from unconditioned spaces
- Breaks "Slab-on-grade floors" and "Crawl space walls" requirements sections into prescriptive insulation and mandatory installation sections
- Clarification that whole house mechanical ventilation is required for dwelling units with air leakage rates less than 3 ACH50
- Provides building air leakage testing requirement clarification for projects with an attic that is both air sealed and insulated at the roof deck.

Commercial Energy Conservation Code Changes

This overview of commercial provision changes in the 8th Edition (2023) Florida Building Code, Energy Conservation (FBCEC) focuses on code sections with significant changes and highlights changes with energy impacts.

CHAPTER 1 [CE] Scope and Administration

Changes to scope and administration requirements in the 8th Edition (2023) FBCEC included construction documents and supporting data have digital submittal options where the code official allows per section C103.1, the documents must consist of the energy compliance path per section C103.2, and the final building inspection must be completed after the code official and the owner have received the preliminary commissioning report per section C104.2.6.

CHAPTER 2 [CE] Definitions

New commercial definitions added to the 8th Edition (2023) FBCEC include *"Internal Curtain System", "Large-Diameter Ceiling Fan", "Renewable Energy Resources", and "Thermal Distribution Efficiency (TDE)."*

Definitions of *"Demand Recirculation Water System", "Skylights", "General Lighting", "Greenhouse", "Networked Guestroom Control System", "On-Site Renewable Energy",* and *"Wall, Above-Grade"* were modified.

CHAPTER 3 [CE] General Requirements

Changes to general commercial requirements include tubular daylighting devices rating (*VTannual)* must be measured and rated per ANSI/NFRC 203 standard in section C303.1.3. Reflectance and emittance of low-sloped roofs directly above cooled conditioned spaces in climate zone 1A required to comply with Table C402.3 in section C303.1.5.

Tubular daylighting devices must be measured and rated per ANSI/NFRC 203 standard.

CHAPTER 4 [CE] Commercial Energy Efficiency

The Commercial Energy Efficiency chapter saw extensive changes between the 7th Edition (2020) and 8th Edition (2023) FBCECs, including a number of clarifications, the re-organization of several sections, and several new and modified system requirement revisions.

C402.5.1.2 Air barrier compliance

Revised opaque thermal envelope air barrier compliance to include buildings' thermal envelope performance testing requirements. Buildings in *Group R* and *Group I* occupancies must meet provisions of section C402.5.1.2.1 or C402.5.1.2.2, buildings other than *Group R* and *Group I* occupancies must meet either the new thermal envelope performance testing provisions of section C402.5.1.2.3 or meet the requirements of section C402.5.1.2.1 or C402.5.1.2.2. The thermal envelope performance testing compliance requirement has exceptions depending on the building's floor area and climate zones.

C402.5.1.2.3 Building thermal envelope testing compliance

This new section requires a building or portion of a building thermal envelope to be tested per ASTM E779, ANSI/RESNET/ICC 380, or ASTM E1827 or an equivalent method approved by the code official, and the measured air leakage must not exceed 0.40 cfm/ft^2 at a pressure differential of 0.3-inch water gauge (75 Pa). If the measured air leakage rate is > 0.4 cfm/ft^2 and < 0.6 cfm/ft^2, to comply with this section, a diagnostic test must be conducted using a smoke tracer or infrared imaging, leaks are sealed, and an additional report identifying the corrective actions taken must be submitted to code official and the building owner.

C402.5.11 Operable openings interlocking (Mandatory)

This mandatory new section requires operable openings to the outdoors that are larger than 40 ft^2 in areas to be interlocked with the heating and cooling system to raise the cooling set-point to 90°F and lower the heating set-point to 55°F within 10 minutes of the operable opening.

C402.5.11.1 Operable controls (Mandatory)

This mandatory new sub-section requires operable opening controls to comply with the operable opening interlocking control requirements of section C403.6.

C403.2.3 HVAC equipment performance requirements

This section is revised, including footnotes for clarity and updated efficiency values in Tables C403.2.3(1), C403.2.3(2), C403.2.3(3), C403.2.3(4), and C403.2.3(8) per the federal minimum efficiency requirements. Reorganized and substantially revised Tables C403.2.3(9) and C403.2.3(11). Added minimum efficiency requirement for new HVAC equipment in Tables C403.2.3(12) through C403.2.3(17). Introduces new efficiency metrics SEER2 and HSPF2 for unitary air conditioners and heat pumps.

There are new minimum efficiency requirements for new HVAC equipment.

C403.2.4.8.1 Temperature set-point controls

Revised this section's guestroom HVAC requirements to have three modes of thermostat temperature controls: (1) when the guest room is rented but unoccupied, (2) when the guest room is unrented and unoccupied, and (3) when the guest room is occupied.

C403.4.2.3.3 Two-position value

This revision requires each hydronic heat pump on a hydronic system having a total pump system power exceeding 10 hp (7.5 kW) to have a two-position automatic valve, and the valve must be interlocked with the compressor to shut off water flow when the compressor is off.

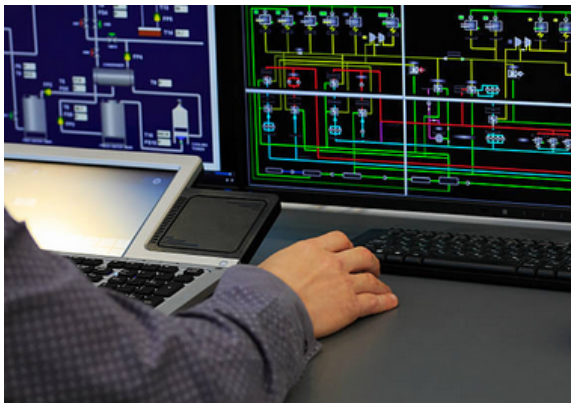
C403.4.2.4 Part-load controls

This change increases the hydronic systems control requirement stringency by reducing the heated or chilled water design output capacity to 300 kBtu/h from 500 kBtu/h. It reduced the minimum combined motor capacity to 2 hp from 10 hp with three or more control valves or other devices for automatically varying fluid flow by at least 50% for hydronic systems. It also reduced the minimum

combined motor capacity to 2 hp from 10 hp for automatically varying pump flow by at least 50% on heating-water systems, chilled-water systems, and heat rejection loops serving water-cooled unitary conditioners.

C403.4.4.5 Supply-air temperature reset controls

This revision requires that HVAC zones with relatively constant loads have maximum airflow designed to accommodate the fully reset supply air temperature. Also revised an existing exemption and added two new exceptions: (1) systems with < 3,000 cfm of design outside air in climate zones 0A, 1A, and 3A, (2) systems with < 10,000 cfm of design outside air in climate zone 2A, and (3) systems with ≥ 80 % outside air and employing exhaust air energy recovery complying with section C403.7.4 in climate zones 0A, 1A, 2A, and 3A.



HVAC zones with relatively constant loads need maximum airflow designed to accommodate the fully reset supply air temperature.

C403.6 Operable openings interlocking controls

This new mandatory section requires that heating and cooling systems have controls that will interlock with operable openings operation such that it resets the thermostat set points or shuts off the system depending on the outside air temperature.

C405 Electrical Power and Lighting Systems

Lighting devices and controls sections for interior and exterior lighting are extensively revised and re-organized. The maximum interior *Lighting Power Density (LPD)* allowance for the *Building Area Method* in Table *C405.3.2(1)* and for the *Space-by-space* methods in Table C405.3.2(2) are reduced for most categories. There are no changes to the exterior lighting power base and surface allowances.

C405.1.1 Walk-in cooler lighting

This new sub-section requires a minimum efficacy of 40 lumens per watt, including ballast losses, for lights in walk-in coolers, walk-in freezers, refrigerated warehouse coolers, and refrigerated warehouse freezers in conjunction with a device that turns off the lights within 15 minutes when the space is not occupied.

There are new lighting requirements for walk-in coolers and freezers.

C405.2 Lighting controls (Mandatory)

Section C405.2 *Lighting controls* is revised and re-organized for clarity. Revised lighting control requirements can be met either via Sections C405.2.1 through C405.2.8, or luminaire level lighting controls (LLLC) and lighting controls in Sections C405.2.1, C405.2.5 and C405.2.6 by independently monitoring occupant activity, monitoring electric lighting and daylighting levels using sensors, setpoints, timers, and dimmers.

TABLE C403.2.3(1)
MINIMUM EFFICIENCY REQUIREMENTS: ELECTRICALLY OPERATED UNITARY AIR CONDITIONERS AND CONDENSING UNITS[c]

EQUIPMENT TYPE	SIZE CATEGORY	HEATING SECTION TYPE	SUBCATEGORY OR RATING CONDITION	MINIMUM EFFICIENCY	TEST PROCEDURE[a]
Air conditioners, air cooled	< 45,000 Btu/h[b]	All	Split System, three phase and applications outside US single phase[b]	14.0 SEER before 1/1/2023 14.3 SEER2 after 1/1/2023	AHRI 210/240—2017 before 1/1/2023 AHRI 210/240—2017—2023 after 1/1/2023
	≥ 45,000 Btu/h[b] and < 65,000 Btu/h[b]			14.0 SEER before 1/1/2023 13.8 SEER2 after 1/1/2023	
	< 65,000 Btu/h[b]		Single Package, three phase and applications outside US single phase[b]	14.0 SEER[c] before 1/1/2023 13.4 SEER2 after 1/1/2023	
Through-the-wall (air cooled)	≤ 30,000 Btu/h[b]	All	Split System, three phase and applications outside US single phase[b]	12.0 SEER before 1/1/2023 11.7 SEER2 after 1/1/2023	
			Single Package, three phase and applications outside US single phase[b]	12.0 SEER before 1/1/2023 11.7 SEER2 after 1/1/2023	

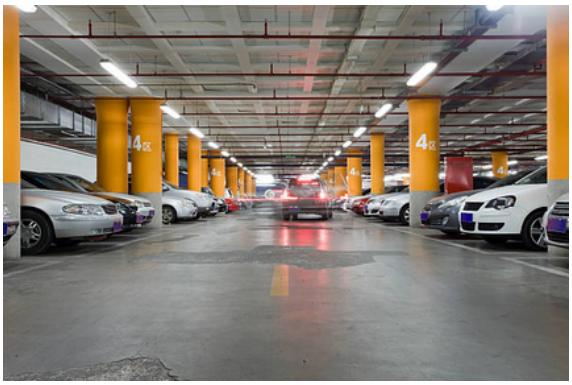
Partial 8th Edition (2023) FBCEC Table C403.2.3(1) with updated minimum equipment efficiencies shown.

C405.2.1 Occupant sensor controls

This section updates and adds corridor space types that require occupant sensor controls. Adds an exception that luminaires with specific application controls per section C405.2.5 are exempted from occupancy sensor-based light control.

C405.2.1.1 Occupant sensor control function

This revision requires occupant sensor controls in corridor spaces to comply with new section C405.2.1.4. Also, full automatic-on lighting controls with *no manual* control are allowed in corridors, interior parking areas, stairways, restrooms, locker rooms, lobbies, library stacks, and areas where the manual operation would endanger occupant safety or security.



Full, automatic-on lighting controls, with no manual control, are allowed in designated areas for occupant safety and security.

C405.2.1.2 Occupant sensor control function in warehouse areas

Revised and clarified warehouse storage area lighting control function provisions.

C405.2.1.3 Occupant sensor control function in open plan office areas

The occupancy sensor-based lighting controls in open-office areas compliance requirements are revised, and an exception is added where general lighting is turned off by time-switch control complying with Section C405.2.2.1 are exempted from the automatic turn-off control requirement.

C405.2.1.4 Occupant sensor control function in corridors

This new section requires occupant sensor controls in corridor spaces type.

C405.2.2 Time-switch controls

This revision exempts luminaires with specific application controls per section C405.2.5 from time-switch control requirements. Also, time-switch controls must automatically turn lights off when the space is scheduled to be unoccupied per sub-section C405.2.2.1.

C405.2.3 Light-reduction controls

This new section requires that spaces not provided with occupant sensor controls complying with Section C405.2.1.1 must provide manual light reduction controls complying with Section C405.2.3.1 for general lighting. It also adds three exceptions.

C405.2.3.1 Light-reduction controls function

This revised section requires that spaces requiring light-reduction controls have a manual control.

Daylight-response controls are re-organized and extensively edited for clarity and consistency.

C405.2.4 Daylight-responsive controls

Daylight-response controls are re-organized and extensively edited for clarity and consistency.

C405.2.4.1 Daylight-responsive control function

Revised this section by renumbering and updating the referenced sections. Added a new provision that when occupant sensor controls have reduced the lighting power to an unoccupied set point per sections C405.2.1.2 through C405.2.1.4, daylight responsive controls must continue to adjust electric light levels in response to available daylight but must be configured not to increase the lighting power above the specified unoccupied set point.

C405.2.5 Specific application controls

Revised this section by renumbering and updating referenced sections. The revised code requires a separate manual control provided to control luminaires for which additional lighting power is claimed per section C405.3.2.2.1, display lighting used for exhibits in galleries, museums, and monuments, and task lighting used for medical and dental purposes.

C405.2.8 Parking garage lighting controls

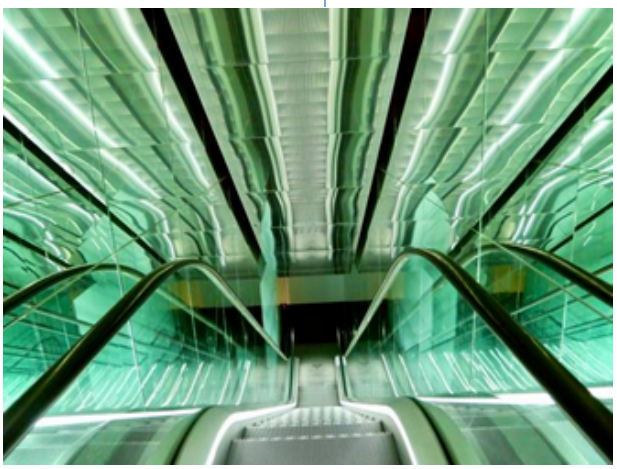
This new section requires parking garage lighting to be controlled by an occupant sensor complying with Section C405.2.1.1 or a time-switch control complying with Section C405.2.2.1.

C405.8 Vertical and horizontal transportation systems and equipment

Designates sub-sections C405.8.1, C405.8.2, and C405.8.2.1 are mandatory.

C405.8.2.1 Energy recovery (Mandatory)

Renamed the section and revised the code language that escalators must be designed to recover electrical energy when resisting over-speed in the down direction regardless of load.



Escalators must be designed to recover electrical energy when resisting over-speed in the down direction.

C405.9 Lighting for plant growth and maintenance (Mandatory)

This new mandatory section requires that at least 95% of the permanently installed luminaires used for plant growth and maintenance must have a minimum photon efficiency of 1.6 µmol/J per ANSI/ASABE S640.

Luminaries used for plant growth and maintenance must have a minimum photon efficiency of 1.6 µmol/J per ANSI/ASABE S640.

C405.3.2 Interior lighting power allowance

This section is rearranged and edited for clarity. The total interior lighting power allowance (watts) is determined according to updated Table C405.3.2(1) using the *Building Area Method* or updated Table C405.3.2(2) using the *Space-by-Space Method*. The interior Lighting Power Density (LPD) allowances in Table C405.3.2(1) and Table C405.3.2(2) are reduced.

C408.2.3 Functional performance testing

Revised functional performance testing specified in Sections C408.2.3.1 through C408.2.3.3 must be witnessed and documented by a licensed design professional, electrical engineer, mechanical engineer, or approved agency. The reporting commissioning professional must be present for any functional performance tests.

C408.2.5 Documentation requirements

Section C408.2.5 requires that the documents described in this section be provided not only to the building owner or owner's authorized agent but also to the code official within 90 days of receipt of the certificate of occupancy.

CHAPTER 5 [CE] Existing Buildings

The commercial Existing Buildings chapter saw a number of changes, including renumbering of some of the sections, and added exceptions to sections C501.2 and C505.1. Rearranged the code language for clarity that existing buildings and structures must comply with Sections C502, C503, C504, and C505 of this code and with the provisions for alterations, repairs, additions, and changes of occupancy or relocation, respectively. Any additions, alterations, repairs, or changes of occupancy complying with ANSI/ASHRAE/IESNA 90.1 are exempted.

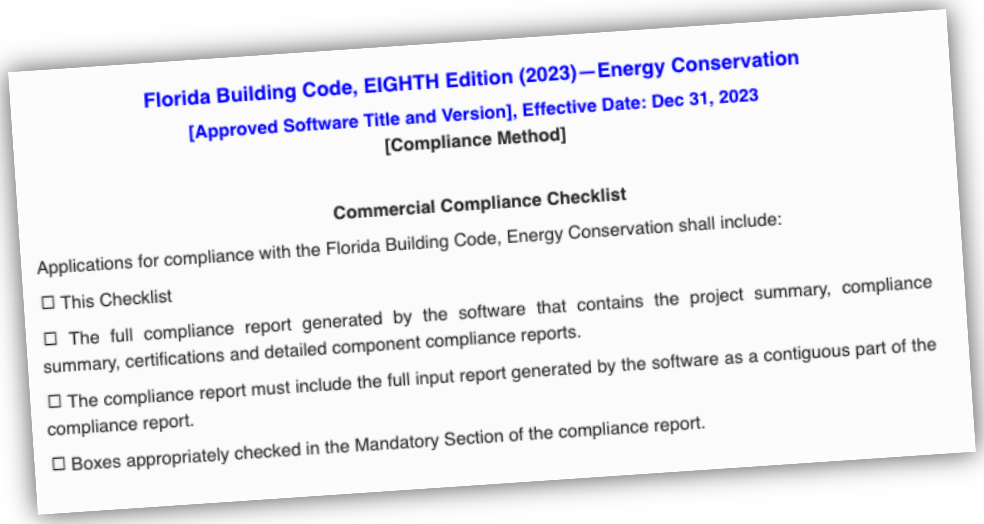
C503.2.2.1 Replacement fenestration products

This new section requires a new fenestration product, including sash and glazing, replacing an existing fenestration unit to meet the applicable requirements for *U*-factor and SHGC in Table C402.4. Alternatively, the area-weighted average of the *U*-factor of replacement fenestration products is permitted to satisfy the *U*-factor requirements.

New fenestration products, replacing existing ones, must meet U-factor and SHGC requirements.

APPENDIX CA Forms

Commercial form changes in the 8th Edition (2023) FBCEC include editorial changes, and a new Commercial Compliance Checklist is added to help clarify reporting requirements and facilitate code compliance verification.



Florida Building Code, EIGHTH Edition (2023)—Energy Conservation
[Approved Software Title and Version], Effective Date: Dec 31, 2023
[Compliance Method]

Commercial Compliance Checklist

Applications for compliance with the Florida Building Code, Energy Conservation shall include:

☐ This Checklist

☐ The full compliance report generated by the software that contains the project summary, compliance summary, certifications and detailed component compliance reports.

☐ The compliance report must include the full input report generated by the software as a contiguous part of the compliance report.

☐ Boxes appropriately checked in the Mandatory Section of the compliance report.

A new Commercial Compliance Checklist is added in the 8th Edition to help clarify reporting requirements and facilitate code compliance verification.

APPENDIX CC Electric Vehicle Charging Provisions for New Commercial Construction

New Appendix CC provides provisions for new commercial construction requiring electric vehicle charging (not mandatory unless specifically referenced in an adopting ordinance).

Residential Energy Conservation Code Changes

This overview of residential provision changes in the 8th Edition (2023) Florida Building Code, Energy Conservation (FBCEC) focuses on code sections with significant changes and highlights changes with energy impacts.

CHAPTER 1 [RE] Scope and Administration

Residential Scope and Administration chapter changes include removal of the REScheck compliance option from the Index to code compliant forms and the addition of "energy compliance path" to details required on construction documents. Several Chapter 1 sections are also reorganized and edited slightly.

CHAPTER 2 [RE] Definitions

New residential volume definitions for "On-site Renewable Energy" and "Renewable Energy Resources" are added to the 8th Edition (2023) FBCEC. Wording changes and clarifications are also made to several existing residential definitions including "Roof Recover" and "Vertical Fenestration."

Residential Equipment Efficiency

While not shown as specific changes within the *residential* FBCEC provisions outside of one form change, 8th Edition (2023) residential compliance requires meeting a number of updated minimum equipment efficiencies including new SEER2 and HSPF2 metrics for air conditioners *and heat pumps* as specified in the commercial provisions of the code (further discussed in the commercial section above).

CHAPTER 3 [RE] General Requirements

A determination of compliance for air-impermeable insulation is added to the residential General Requirements in the 8th Edition (2023) FBCEC.

CHAPTER 4 [RE] Residential Energy Efficiency

The Residential Energy Efficiency chapter saw a number of changes in the 8th Edition (2023) FBCEC including several clarifications, performance compliance, site-wrapped duct insulation and other stringency increases, and form updates.

R402.2.4 Access hatch doors and insulation retention

Language is added to this prescriptive section to address loose-fill insulation retention for higher to lower sections of the attic and for when attics cover conditioned to unconditioned spaces.

R402.4.1.2 Testing

Text added within the residential building air leakage testing section clarifies an existing requirement that whole-house mechanical ventilation be provided for Florida dwelling units with air leakage rates less than 3 ACH50, in accordance with provided code sections.

Text added to Section R402.4.1.2 clarifies when whole-house mechanical ventilation is required.

R402.4.1.2 Testing

An additional residential building air leakage testing requirement clarifies that if an attic is both air sealed and insulated at the roof deck, interior access doors and hatches between the conditioned space volume and the attic must be opened during the test, and the volume of the attic must be added to the conditioned space volume for purposes of reporting infiltration volume and calculating the air leakage of the home.

Table R403.6.1 Whole-house mechanical ventilation system fan efficacy

Changes to this table increase the minimum efficacy requirements for whole-house mechanical ventilation “In-line fan” and “Bathroom, utility room” fan locations.

R404.1 Lighting equipment (Mandatory)

The residential lighting equipment section now requires all permanently installed residential luminaires, excluding those in kitchen appliances, to have an efficacy of at least 45 lumens-per-watt or utilize lamps with an efficacy of not less than 65 lumens-per-watt.

R405.2 Mandatory requirements

An additional performance compliance provision requires that site-wrapped supply ducts not completely inside the building thermal envelope be insulated to a minimum of R-8 (instead of R-6).

Site-wrapped supply ducts not inside the building thermal envelope must be insulated to R-8.

R405.3 Performance-based compliance

The stringency of the Simulated Performance Alternative (Performance) based compliance method is increased by 5% from the 7th Edition (2020) and 2022 Supplement FBCEC level, so the new maximum total e-Ratio is decreased from 1.00 to 0.95.

Standard Reference Loads	Proposed Loads	e-Ratio	Project Status
61.30	60.00	0.98	**FAILS**
61.30	58.00	0.95	**PASSES**

Performance compliance stringency is increased by 5% in the 2023 FBCEC, passing now requiring a total e-Ratio of 0.95 or less.

R405.7.1 Installation criteria for homes claiming the radiant barrier option

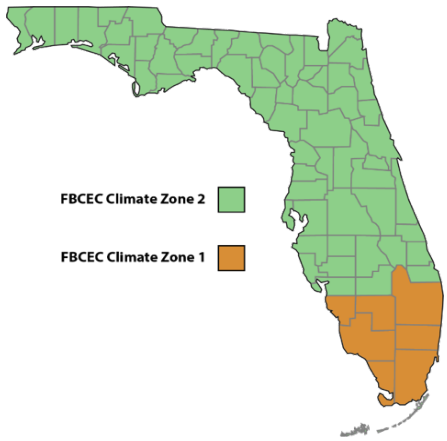
The operative surface emissivity limit for sheet radiant barriers is increased from 0.06 to 0.10.

R406.2.1 Site-wrapped supply ducts

A new Energy Rating Index compliance provision requires that site-wrapped supply ducts not completely inside the building thermal envelope to be insulated to a minimum of R-8 (instead of R-6). See same requirement for performance compliance above.

CHAPTER 5 [RE] Existing Buildings

Changes to the residential Existing Buildings chapter in the 8th Edition (2023) FBCEC include a Climate Zone 2 electric resistance space heating prohibition and reduction of the alteration section's new lighting requirement exception limit.



The 2023 FBCEC prohibits electric resistance from being the primary space heating system type used for complete central equipment replacements in Climate Zone 2.

R501.7.2. Electric space heating

A new section in the Existing Buildings chapter prohibits electric resistance from being the primary space heating system type used for complete central equipment replacements in Climate Zone 2. Note that electric resistance can still be the primary heating system for *new construction* Climate Zone 2 projects complying via the performance (Section R405) or Energy Rating Index (Section R406) path.

R503.1.4 Lighting

Existing Buildings Section R503.1.4 requires that new lighting systems that are part of an alteration comply with the FBCEC. In the 2020 FBCEC this section included an exception for alterations that replace less than 50 percent of the luminaires in a space. In the 2023 FBCEC this exception has been reduced to alterations that replace less than 10 percent of the luminaires in a space.

APPENDIX RC: Calculation of End Use Energy Loads

Appendix RC Table RC-1(1) coefficients are updated to account for new federal regulations that apply to Florida heating and cooling equipment.

APPENDIX RD: Forms

Residential form changes between the 7th Edition (2020) and 8th Edition (2023) FBCEC include a significant form update.

Form R402-2023

The Form R402-2023 Equipment Requirements and Installed Values table is revised to include updated system types and minimum efficiency levels, including new SEER2 and HSPF2 labeling.

FORM R402—continued EQUIPMENT REQUIREMENTS AND INSTALLED VALUES

Fill in the "INSTALLED EFFICIENCY LEVEL" column with the information requested. For multiple systems of the same type, indicate the minimum efficient system. All "INSTALLED" values must be equal to or more efficient than the required level. If a listed "SYSTEM TYPE" is not to be installed, write in "N/A" for not applicable.

SYSTEM TYPE	MINIMUM EFFICIENCY LEVEL REQUIRED	INSTALLED EFFICIENCY LEVEL
Air distribution system[1]	Not allowed in attic	Location:
Air handling unit	Factory Sealed	Factory Sealed? Y/N
Duct *R*-value	= R-8 (Ducts in unconditioned attics, Diameter ≥ 3 in.)	*R*-Value (In unc. attic) =
	= R-6 (Ducts in unconditioned non attics, Diam. ≥ 3 in.)	*R*-Value (In unc. non attics) =
	= R-6 (Ducts in unconditioned attics, Diameter < 3 in.)	*R*-Value (Small ducts in attic) =
	= R-4.2 (Ducts in unconditioned not attics, Diam. < 3 in.)	*R*-Value (Small ducts in unc) =
	All ducts are in conditioned space (No minimum)	All in conditioned space ? Y/N
Air leakage/Duct test	Air handler installed: Total leakage = 4 cfm/100 s.f.	
	Air handler not installed: Total leakage = 3 cfm/100 s.f.	Total leakage = _____ cfm/100 s.f.
		Air handler installed? Y/N
Duct testing	Test not required if all ducts and AHU are within the building thermal envelope and for additions or alterations where ducts extended from existing heating and cooling system through unconditioned space are < 40 linear ft.	Test report required? Y/N
Air conditioning systems:	Minimum federal standard required by NAECA[2]:	
Central system < 45,000 Btu/h	SEER2 14.3	Cap.(Btu/h) =
Central system ≥ 45,000 Btu/h	SEER2 13.8	SEER2 (Min) =
Central heat pump	SEER2 = 14.3	SEER2 (Min) =
PTAC, PTHP, SPVAC or SPVHP	EER [from Table C403.2.3(3)]	Type = Cap. (Btu/h) = EER (Min) =
Other:	See Tables C403.2.3(1)–(11)	Type = Effic. (min) =
Heating systems:	Minimum federal standard required by NAECA[2]:	
Electric resistance	Not allowed in Climate Zone 2	
Heat pump	HSPF2 ≥ 7.5	HSPF2 (Min) =
Gas furnace, non-weatherized	AFUE ≥ 80%	AFUE (Min) =
Oil furnace, non-weatherized	AFUE ≥ 83%	AFUE (Min) =
PTHP or SPVHP	COP_H [from Table C403.2.3(3)]	Type = Cap. (Btu/h) = COP_H (Min) =
Other:	See Tables C403.2.3(1)–(16)	Type = Effic. (min) =
Water heating system (storage type):	Minimum federal standard required by NAECA[2]:	Capacity =
Electric[3, 6]	UEF 40 gal.; 0.931; 50 gal.: 0.930; 60 gal.: 2.176	UEF (Min) =
Gas fired[4, 6]	UEF 40 gal.; 0.64; 50 gal.: 0.627; 60 gal.: 0.789	UEF (Min) =
Other (describe)[5, 6]:		Effic. (min) =

Equipment Efficiency—[PASS / FAIL]

(1) Ducts & AHU installed "substantially leak free" per Section R403.3.2. Test required by either individuals as defined in Section 553.993(5) or (7), *Florida Statutes*, or individuals licensed as set forth in Section 489.105(3)(f), (g), or (i), *Florida Statutes*. The total leakage test is not required for ducts and air handlers located entirely within the building thermal envelope, and for additions where ducts from an existing heating and cooling system extended to the addition through unconditioned space are less than 40 linear ft.

(2) Minimum efficiencies are those set by the *National Appliance Energy Conservation Act* of 1987 for typical residential equipment and are subject to NAECA rules and regulations. For other types of equipment, see Tables C403.2.3 (1)-(11) of the Commercial Provisions of the *Florida Building Code, Energy Conservation*.

(3) For electric storage volumes ≤ 55 gallons, minimum UEF = 0.9349 – (0.0001 * volume). For electric storage volumes > 55 gallons, minimum UEF = 2.2418 – (0.0011 * volume).

(4) For natural gas storage volumes ≤ 55 gallons, minimum UEF = 0.692 – (0.0013 * volume). For natural gas storage volumes > 55 gallons, minimum UEF = 0.8072 – (0.0003 * volume).

(5) For electric tankless, min. UEF = 0.92. For natural gas tankless, min. UEF = 0.81.

(6) Referenced UEFs shown are for high draw pattern value provided by manufacturer.

As shown by the blue font indicating changes, the Form R402 Equipment Requirements and Installed Values table is revised to update system types and minimum efficiency levels.

APPENDIX RE: Board of Appeals – Residential

New Appendix RE provides for the establishment of a residential code board of appeals for the purpose of hearing applications for modification of the requirements of the code.

APPENDIX RF: Electric Vehicle Charging Provisions for One- and Two-Family Dwellings and Townhouses

New Appendix RF specifies electric vehicle charging provisions for one- and two-family dwellings and townhouses, including provision for future installation of electrical vehicle supply equipment, a raceway, and service capacity (not mandatory unless specifically referenced in an adopting ordinance).

Resources

8th Edition (2023) *Florida Building Code, Energy Conservation*, International Code Council, Inc. Accessible online at https://www.floridabuilding.org/bc/bc_default.aspx.

Answers to Specific Questions

Florida Department of Business and Professional Regulation: 1-850-487-1824 and https://www.floridabuilding.org.